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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,625	08/05/2003	Kyeong Jin Kim	041501-5455-01	6368

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EXAMINER

DI GRAZIO, JEANNE A

ART UNIT PAPER NUMBER

2871

DATE MAILED: 04/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/633,625

Applicant(s)

KIM, KYEONG JIN

Examiner

Jeanne A. Di Grazio

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 11-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>082003</u> | 6) <input type="checkbox"/> Other: ____  |

## DETAILED ACTION

### *Priority*

Priority to Korean Patent Application P2000-0066138 (Nov. 8, 2000) is claimed.

This is a Continuation Patent Application of prior application 09/986,189 now US 6,642,992 B2.

### *Status of Claims*

Per transmittal received August 5, 2003, claims 1-10 and 19-21 have been cancelled.

Claims 11-18 are pending.

### *Claim Objections*

Claim 18 is objected to because of the following informalities:

Per claim 18, the preamble recites "[t]he *method* according to claim 17." However, claim 18 and all preceding claims are drawn to a liquid crystal display *device*.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kagawa et al. (US 6,265,034 B1) in view of Sekine et al. (US 6,313,894 B1).

Per claims 11 and 14: Kagawa teaches and discloses a liquid crystal display device.

Kagawa has, with reference to Figure 2, a first substrate (3), a second substrate (3) opposing the

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first substrate, and at least one liquid crystal layer (8) between the first and second substrates wherein the liquid crystal layer has at least a photo-reactive material (ABS, entire patent). It may be presumed that the photo-reactant material includes one of a photo-reactant polymer and photo-reactant oligomer (Applicant's claim 14).

Kagawa does not appear to explicitly specify at least one sealant along a periphery of one of the first and second substrates.

Sekine teaches and discloses, with reference to Figures 5A and 5B, a main sealing agent (13) along a periphery of one of first (11) and second (12) substrates. The main sealing agent (13) is used in the display to secure a liquid crystal material between substrates and to contain the liquid crystal material in a display region. The main sealing agent (13) serves to maintain the opposite glass and active matrix substrates parallel to each other and to contribute to a constant distance between the substrates (Column 7, Lines 43-48).

Sekine is evidence that ordinary workers in the field of liquid crystal displays would have had the reason, suggestion, and motivation to provide a sealant along a periphery of one of first and second substrates to keep the substrates parallel with each other and to maintain a constant distance between the substrates.

Therefore, it would have been obvious to one of ordinary skill in the art of liquid crystal displays at the time the invention was made to modify Kagawa in view of Sekine to incorporate at least one sealant along a periphery of one of first and second substrates into a liquid crystal display device (1) to contain the liquid crystal layer and photo-reactive material in a display region, (2) to contribute to the substrates remaining parallel with each other, and (3) to maintain a constant distance between the substrates.

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Per claims 12 and 13: The main sealing agent may include thermosetting resins, UV-cured resins, and dual active resins which can harden in the presence of UV rays as well as heating (Column 7, Lines 43-48).

Per claim 15: Though not illustrated, Sekine presumably contains at least an alignment layer for alignment of the liquid crystal layer (17).

Per claim 16: Sekine has, with reference to Figure 7, black stripes (222) (Applicant's light-shielding layer), a color filter (fluorescence layer, 221), and common electrode (223) all on opposing substrate (220) as conventional elements of a color active matrix display.

Per claim 17: Sekine, with respect to Figure 5B, illustrates at least one spacer (14) to maintain substrate gap.

Per claim 18: The spacer of Figure 5B (spacer 14) appears columnar in shape.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeanne A. Di Grazio whose telephone number is (571)272-2289.

The examiner can normally be reached on M-F.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached on (571)272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jeanne Andrea Di Grazio

Robert Kim, SPE

Patent Examiner  
Art Unit 2871

  
ROBERT H. KIM  
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